REMARKS

The Office Action dated June 1, 2005 and the Advisory Action dated August 5, 2005 have been carefully reviewed and the foregoing amendment and following remarks have been made in consequence thereof.

Claims 1-20 are pending in this application. Claims 1-20 stand rejected.

The rejection of Claims 1-3, 7-10, 14-16, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Iwanczyk et al. (U.S. Patent 5,773,829) is respectfully traversed.

Iwanczyk et al. describe an imaging detector (ID) having a collimator (20), a scintillator (22) and a photodiode array ("PDA") (24) that detects radiation from a radiation source (26). Scintillator 22 is an array constructed from individual scintillator segments (36A) and (36B) such that each scintillator segment is surrounded on its sides and its top by an optical reflector (60) that is spaced from the segment by an air gap (62). The optical reflector (60) reflects light back into the scintillator segment that produced it. Typically, the optical reflector (60) consists of an epoxy doped with titanium dioxide.

Preliminarily, Applicants respectfully traverse the assertion in the Office Action that although "Iwanczyk et al. do not specifically disclose the reflector is pre-formed, but it is obvious that it is." Applicants agree that Iwanczyk et al. do not specifically disclose the reflector is pre-formed, but additionally note that Figure 2 illustrates inter-segment spaces (64) that "incorporate high atomic number septa (e.g. tungsten or lead)" as crosshatched members. In a response dated April 4, 2005 to an Office Action dated February 2, 2005 Applicants interpreted optical reflector (60) as the cross hatched members because of the position of the callout line shown in the figure. As such, Applicants described optical reflector (60) as a plurality of individual slabs of material joined at one end to another separate slab wherein a joint between each end and the connecting slab indicates reflector is not pre-formed, but, rather, is assembled. However, this a description of the septa having a high atomic number for impeding the propagation of radiation. Further, optical reflector (60) is illustrated as a coating applied to the septa. Such a coating is not pre-formed but applied to the septa. Iwanczyk et al. do not describe nor suggest the reflector is pre-formed, but describes the optical reflector (60) as an epoxy and illustrates the epoxy coating applied to the septa. Accordingly, optical reflector (60) is not pre-formed but, rather applied to the septa.

Applicants further traverse the use of extrinsic evidence for determining the meaning of claim terms. Specifically, the Office Action uses a definition from Wikipedia, a free internet encyclopedia, to assert that an epoxy is a thermoset. Applicants strongly traverse the use of an open source encyclopedia such as Wikipedia as a source for examining patent applications. Wikipedia's website describes itself as:

> an encyclopedia written collaboratively by many of its readers. Lots of people are constantly improving Wikipedia, making thousands of changes an hour, all of which are recorded on the page history and the Recent Changes page.

The Wikipedia website further recites:

> Don't be afraid to edit pages on Wikipedia—anyone can edit, and we encourage users to be bold! Find something that can be improved, either in content, grammar or formatting, then fix it.

Applicants respectfully submit that a website where "[l]ots of people...making thousands of changes an hour" and that encourages these people to "be bold" and not be "afraid to edit pages on Wikipedia" can not be used as a source of reliable information for examining patent applications. Applicants submit that Wikipedia has no reputation with those skilled in the art and is compiled anonymously, which gives Applicants no chance to challenge the knowledge or repute of the authors. The Wikipedia website also states: "[m]ost Wikipedia articles currently lack good references, and this contributes to Wikipedia's single greatest criticism – that it is not a reliable source."

In interpreting a claim to determine its true meaning, reference must be made to intrinsic evidence – the patent specification, the prosecution history and the other claims in the patent. Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1346-47 (Fed. Cir. 2004).

With respect to dictionary usage, a recent Federal Circuit case indicates that certain types of evidence are more valuable than others and that the appropriate weight be assigned to those sources in light of the statutes and policies that inform patent law. Phillips v. AWH Corp., Fed. Cir., No. 03-1269, p 31, 7/12/05. "Judges are free to consult dictionaries and technical treatises ' at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents.'" Id. at 28 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 n.6 (Fed. Cir. 1996)).

The present specification, as originally filed recites;

> As used herein, a thermo set material is defined as a liquid resin that reacts with a catalyst to form a solid material. More specifically, thermo set resin is initially in liquid form, but is converted to a solid form when heat is applied. Generally, thermo set resins cannot be converted back to liquid form without destroying it. A thermo plastic is defined as a liquid that is converted to a solid, but can be converted back to liquid form by applying heat.

Iwanczyk et al., describe that the optical reflector consists of an epoxy doped with titanium dioxide. Applicants respectfully submit that an epoxy can not fairly be considered to be a liquid resin that reacts with a catalyst to form a solid material when heat is applied or a liquid that is converted to a solid, but can be converted back to liquid form by applying heat. Applicants have no control over how other sources may define terms that are used in the specification, Applicants can only control the definitions for terms used in the claims by including the definitions in the claims or specification. Applications respectfully request that the definition in the specification be used to govern the interpretation of claim terms rather than extrinsic evidence such as an open source Internet encyclopedia where anonymous users are free to edit the definitions of terms.

Applicants also traverse the assertion in the Office Action that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an adhesive material or some other functional equivalent means for coupling the scintillator array and the pre-formed reflector, to ensure proper alignment with one another. Iwanczyk et al. describe that each scintillator segment is surrounded on its sides and its top by the reflector that is spaced from the segment by an air gap. The teaching of an air gap between the scintillator and the reflector precludes using an adhesive to couple the scintillator to the reflector. As described above, the reflector is an epoxy that is applied to the septa, which are separated from the scintillator by an airgap. Accordingly, the optical reflector described by Iwanczyk et al. is adhered to and held in place by the septa rather than the scintillator.

Applicants also traverse the assertion in the Office Action that a coating of epoxy applied to a surface is "pre-formed". Applicants respectfully submit that a coating adheres to the surface and whatever convolutions, undulations, and fissures that may be present and therefore can not fairly be considered to be pre-formed simply because it was applied to the surface prior to any further assembly process. The coating takes on the shape of the surface to which it is applied and is not pre-formed.

Applicant respectfully submits that the Section 103 rejection of the presently pending claim is not a proper rejection. As is well established, the mere assertion that it would have been obvious to one of ordinary skill in the art at the time the invention was made that the Iwanczyk et al. reflector is pre-formed does not support a prima facia obvious rejection. Rather, each allegation of what would have been an obvious matter of design choice must always be supported by citation to some reference work recognized as standard in the pertinent art and the Applicants given the opportunity to challenge the correctness of the assertion or the notoriety or repute of the cited reference. Applicants have not been provided with the citation to any reference supporting the modification of the Iwanczyk et al. reflector as made in the rejection. The rejection, therefore, fails to provide the Applicants with a fair opportunity to respond to the rejection, and fails to provide the Applicants with the opportunity to challenge the correctness of the rejection.

Moreover, as is well established, obviousness cannot be established by modifying the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the modification. Iwanczyk et al. do not describe nor suggest the claimed invention. Rather, the present Section 103 rejection appears to be based on a modification of teachings selected from a patent in an attempt to arrive at the claimed invention. Specifically Iwanczyk et al. is cited for its teaching of a detector having a reflector consisting of an epoxy doped with titanium dioxide that is applied to septa and separated from a scintillator by an air gap when the detector is assembled. Since there is no teaching or suggestion in the cited art for the claimed modification, the Section 103 rejection appears to be based on a hindsight reconstruction in which a disclosure has been modified in an attempt to deprecate the present invention. Of course, such a modification is impermissible, and for this reason alone, Applicant respectfully requests that the Section 103 rejection of Claims 1-3, 7-10, 14-16, and 20 be withdrawn.

Further, and to the extent understood, Iwanczyk et al. do not describe nor suggest the claimed combination, and as such, the presently pending claims are patentably distinguishable from the cited art. Claim 1 recites a method for fabricating a scintillator array for a radiation detector of an imaging system wherein the method includes "fabricating a scintillator array including a plurality of scintillators arranged side by side, each of the scintillators separated from adjacent scintillators such that a gap is defined therebetween, each of the scintillators having a geometric shape defined by a plurality of external surfaces...fabricating a pre-formed molded reflector having a plurality of cavities defined therein, each cavity having a geometric shape substantially similar to each scintillator geometric shape...coupling the scintillator array and the pre-formed reflector such that each respective scintillator is positioned at least partially within at least one respective reflector cavity."

Iwanczyk et al. do not describe nor suggest a method for fabricating a scintillator array as recited in Claim 1. Specially, Iwanczyk et al. do not describe nor suggest a method for fabricating a scintillator array for a radiation detector of an imaging system wherein the method includes fabricating a pre-formed molded reflector having a plurality of cavities defined therein. Rather, Iwanczyk et al. illustrates, in Figure 2, that the reflector is applied to a septa spaced apart from the scintillator by an airgap. Further, Iwanczyk et al. do not describe nor suggest a method for fabricating a scintillator array for a radiation detector of an imaging system wherein the method includes coupling the scintillator array and the pre-formed reflector such that each respective scintillator is positioned at least partially within at least one respective reflector cavity. Rather, Iwanczyk et al. describe that each scintillator segment is surrounded on its sides and its top by an optical reflector that is spaced from the segment by an air gap. For at least the reasons above, Claim 1 is submitted to be patentable over Iwanczyk et al.

Claims 2, 3, and 7 depend from independent Claim 1. When the recitations of Claims 2, 3, and 7 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2, 3, and 7 likewise are patentable over Iwanczyk et al.

Claim 8 recites a radiation detector including "a scintillator array comprising a plurality of scintillators arranged side by side, each of said scintillators separated from adjacent scintillators such that a gap is defined therebetween, each of said scintillators having a geometric shape defined by a plurality of external surfaces...a pre-formed molded reflector comprising a plurality of cavities defined therein, each said cavity having a geometric shape substantially similar to each said scintillator geometric shape, said scintillator array coupled to said pre-formed reflector such that each said respective scintillator is positioned at least partially within at least one respective reflector cavity."

Iwanczyk et al. do not describe nor suggest a radiation detector that includes a pre-formed molded reflector comprising a plurality of cavities defined therein, each said cavity having a geometric shape substantially similar to each said scintillator geometric shape, said scintillator array coupled to said pre-formed reflector such that each said respective scintillator is positioned at least partially within at least one respective reflector cavity. Moreover, Iwanczyk et al. do not describe nor suggest a radiation detector that includes a pre-formed reflector comprising a plurality of cavities defined therein. Rather, Iwanczyk et al. illustrates, in Figure 2, that the reflector is applied to a plurality of septa. Further, Iwanczyk et al. do not describe nor suggest a radiation detector that includes a scintillator array coupled to the pre-formed reflector. Rather, Iwanczyk et al. describe that each scintillator segment is surrounded on its sides and its top by an optical reflector that is spaced from the segment by an air gap. For at least the reasons above, Claim 8 is submitted to be patentable over Iwanczyk et al. Claims 9, 10, and 14 depend from independent Claim 8. When the recitations of Claims 9, 10, and 14 are considered in combination with the recitations of Claim 8, Applicants submit that dependent Claims 9, 10, and 14 likewise are patentable over Iwanczyk et al.

Claim 15 recites a computed tomography (CT) imaging system including a radiation source...a radiation detector comprising a scintillator array comprising a plurality of scintillators arranged side by side, each of said scintillators separated from adjacent scintillators such that a gap is defined therebetween, each of said scintillators having a geometric shape defined by a plurality of external surfaces...a pre-formed molded reflector comprising a plurality of cavities defined therein, each said cavity having a geometric shape substantially similar to each said scintillator geometric shape, said scintillator array coupled to said pre-formed reflector such that each said respective scintillator is positioned at least partially within at least one respective reflector cavity...a computer operationally coupled to said radiation source and said radiation detector."

Iwanczyk et al. do not describe nor suggest a computed tomography (CT) imaging system as recited in Claim 15. Specifically, Iwanczyk et al. do not describe nor suggest a radiation detector that includes a pre-formed molded reflector including a plurality of cavities defined therein. Rather, Iwanczyk et al. illustrates, in Figure 2, that the reflector is applied to a surface of the septa. Further, Iwanczyk et al. do not describe nor suggest a radiation detector that includes a scintillator array coupled to the pre-formed reflector. Rather, Iwanczyk et al. describe that each scintillator segment is surrounded on its sides and its top by an optical reflector that is spaced from the segment by an air gap. For at least the reasons above, Claim 15 is submitted to be patentable over Iwanczyk et al.

Claims 16 and 20 depend from independent Claim 15. When the recitations of Claims 16 and 20 are considered in combination with the recitations of Claim 15, Applicants submit that dependent Claims 16 and 20 likewise are patentable over Iwanczyk et al.

For the reasons set forth above, Applicant respectfully requests that the Section 103 rejection of Claims 1-3, 7-10, 14-16, and 20 be withdrawn.

The rejection of Claims 4-6, 11-13, and 17-19 under 35 U.S.C. § 103(a) as being unpatentable over Iwanczyk et al., in view of Duclos et al. (U.S. Patent 6,298,113) is respectfully traversed.

Iwanczyk et al. is described above. Duclos et al. describe a scintillator pack including an x-ray damage shield. The scintillator pack has an array of scintillator pixels. A scintillation light reflecting layer that reflects scintillation light from the pixels is included at least between the scintillator pixels in inter-scintillator regions. An x-ray absorbing layer acts as the x-ray damage shield to protect the portions of the scintillation light reflecting layer from x-rays. The x-ray absorbing layer is formed selectively and in a self aligned manner in regions over the inter-scintillator regions. The x-ray absorbing layer does not extend between the scintillators and do not prevent inter-scintillator crosstalk.

Applicant respectfully submits that the Section 103 rejection of the presently pending claim is not a proper rejection. Obviousness cannot be established by merely suggesting that it would have been obvious to one of ordinary skill in the art to modify Iwanczyk et al. according to the teachings of Duclos et al. More specifically, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Neither Iwanczyk et al. or Duclos et al., alone or in combination, describe or suggest the claimed combination. Rather, the present Section 103 rejection appears to be based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically Iwanczyk et al. is cited for its alleged teaching of a pre-formed reflector that includes titanium dioxide, and Duclos et al. is cited for its alleged teaching of interstitial plates formed integrally with the pre-formed reflector. Since there is no teaching or suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicant respectfully requests that the Section 103 rejection of Claims 4-6, 11-13, and 17-19 be withdrawn.

Further, and to the extent understood, neither Iwanczyk et al. Duclos et al., alone or in combination, describe or suggest the claimed combination, and as such, the presently pending claims are patentably distinguishable from the cited combination. Claims 4-6 depend from Claim 1, which recites a method for fabricating a scintillator array for a radiation detector of an imaging system wherein the method includes "fabricating a scintillator array including a plurality of scintillators arranged side by side, each of the scintillators separated from adjacent scintillators such that a gap is defined therebetween, each of the scintillators having a geometric shape defined by a plurality of external surfaces...fabricating a pre-formed molded reflector having a plurality of cavities defined therein, each cavity having a geometric shape substantially similar to each scintillator geometric shape...coupling the scintillator array and the pre-formed reflector such that each respective scintillator is positioned at least partially within at least one respective reflector cavity."

Neither Iwanczyk et al. or Duclos et al., alone or in combination, describe or suggest a method for fabricating a scintillator array for a radiation detector of an imaging system wherein the method includes fabricating a scintillator array including a plurality of scintillators arranged side by side wherein each of the scintillators is separated from adjacent scintillators such that a gap is defined therebetween and each of the scintillators has a geometric shape defined by a plurality of external surfaces, fabricating a pre-formed molded reflector having a plurality of cavities defined therein wherein each cavity has a geometric shape substantially similar to each scintillator geometric shape, coupling the scintillator array and the pre-formed reflector such that each respective scintillator is positioned at least partially within at least one respective reflector cavity. Moreover, neither Iwanczyk et al. nor Duclos et al., alone or in combination, describe or suggest a method for fabricating a scintillator array for a radiation detector of an imaging system wherein the method includes fabricating a pre-formed reflector having a plurality of cavities defined therein. Rather, Iwanczyk et al. illustrates, in Figure 2, that the reflector is applied as a coating on the septa and Duclos et al. describes an x-ray absorbing layer that is formed on a scintillation light reflecting layer, but Duclos et al. do not describe a plurality of interstitial plates formed integrally with said pre-formed reflector. Further, neither Iwanczyk et al. nor Duclos et al., alone or in combination, describe or suggest a method for fabricating a scintillator array for a radiation detector of an imaging system wherein the method includes coupling the scintillator array and the pre-formed reflector such that each respective scintillator is positioned at least partially within at least one respective reflector cavity. Rather, Iwanczyk et al. describe that each scintillator segment is surrounded on its sides and its top by an optical reflector that is spaced from the segment by an air gap and Duclos et al. describe an x-ray absorbing layer that is formed on a scintillation light reflecting layer. For at least the reasons above, Claim I is submitted to be patentable over Iwanczyk et al. in view of Duclos et al.

Claims 11-13 depend from Claim 8, which recites a radiation detector including "a scintillator array comprising a plurality of scintillators arranged side by side, each of said scintillators separated from adjacent scintillators such that a gap is defined therebetween, each of said scintillators having a geometric shape defined by a plurality of external surfaces...a pre-formed molded reflector comprising a plurality of cavities defined therein, each said cavity having a geometric shape substantially similar to each said scintillator geometric shape, said scintillator array coupled to said pre-formed reflector such that each said respective scintillator is positioned at least partially within at least one respective reflector cavity."

Neither Iwanczyk et al. or Duclos et al., alone or in combination, describe or suggest a radiation detector that includes a scintillator array having a plurality of scintillators arranged side by side wherein each of said scintillators is separated from adjacent scintillators such that a gap is defined therebetween and each of the scintillators has a geometric shape defined by a plurality of external surfaces, a pre-formed molded reflector comprising a plurality of cavities defined therein, each said cavity having a geometric shape substantially similar to each said scintillator geometric shape, said scintillator array coupled to said pre-formed reflector such that each said respective scintillator is positioned at least partially within at least one respective reflector cavity.

Moreover, neither Iwanczyk et al. nor Duclos et al., alone or in combination, describe or suggest a radiation detector that includes a pre-formed molded reflector comprising a plurality of cavities defined therein. Rather, Iwanczyk et al. illustrates, in Figure 2, that the reflector is the reflector is applied as a coating on the septa and Duclos et al. describes an x-ray absorbing layer that is formed on a scintillation light reflecting layer, but Duclos et al. do not describe a plurality of interstitial plates formed integrally with said pre-formed reflector. Further, neither Iwanczyk et al. nor Duclos et al., alone or in combination, describe or suggest a radiation detector that includes scintillator array coupled to pre-formed reflector such that each respective scintillator is positioned at least partially within at least one respective reflector cavity. Rather, Iwanczyk et al. describe that each scintillator segment is surrounded on its sides and its top by an optical reflector that is spaced from the segment by an air gap and Duclos et al. describe an x-ray absorbing layer that is formed on a scintillation light reflecting layer. For at least the reasons above, Claim 8 is submitted to be patentable over Iwanczyk et al. in view of Duclos et al.

Claims 17-19 depend from Claim 15, which recites a computed tomography (CT) imaging system including a radiation source...a radiation detector comprising...a scintillator array comprising a plurality of scintillators arranged side by side, each of said scintillators separated from adjacent scintillators such that a gap is defined therebetween, each of said scintillators having a geometric shape defined by a plurality of external surfaces...a pre-formed molded reflector comprising a plurality of cavities defined therein, each said cavity having a geometric shape substantially similar to each said scintillator geometric shape, said scintillator array coupled to said pre-formed reflector such that each said respective scintillator is positioned at least partially within at least one respective reflector cavity...a computer operationally coupled to said radiation source and said radiation detector."

Neither Iwanczyk et al. or Duclos et al., alone or in combination, describe or suggest a computed tomography (CT) imaging system that includes a radiation source, a radiation detector including, a scintillator array having a plurality of scintillators arranged side by side, each of the scintillators separated from adjacent scintillators such that a gap is defined therebetween wherein each of the scintillators having a geometric shape defined by a plurality of external surfaces, a pre-formed molded reflector comprising a plurality of cavities defined therein, each cavity having a geometric shape substantially similar to each scintillator geometric shape wherein the scintillator array is coupled to the pre-formed reflector such that each respective scintillator is positioned at least partially within at least one respective reflector cavity, a computer operationally coupled to the radiation source and the radiation detector. Moreover, neither Iwanczyk et al. nor Duclos et al. describe or suggest a radiation detector that includes a pre-formed reflector including a plurality of cavities defined therein. Rather, Iwanczyk et al. illustrates in Figure 2, that the reflector is the reflector is applied as a coating on the septa and Duclos et al. describes an x-ray absorbing layer that is formed on a scintillation light reflecting layer, but Duclos et al. do not describe a plurality of interstitial plates formed integrally with said pre-formed reflector. Further, neither Iwanczyk et al. nor Duclos et al. describe or suggest a radiation detector that includes a scintillator array coupled to the pre-formed reflector. Rather, Iwanczyk et al. describe that each scintillator segment is surrounded on its sides and its top by an optical reflector that is spaced from the segment by an air gap and Duclos et al. describe an x-ray absorbing layer that is formed on a scintillation light reflecting layer. For at least the reasons above, Claim 15 is submitted to be patentable over Iwanczyk et al. in view of Duclos et al.

For the reason set forth above, Applicant respectfully requests that the Section 103 rejection of Claims 4-6, 11-13, and 17-19 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

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